



# Introduction to Computers

## Quick Reference Guide

**For many people computers are very complex devices. This handout aims to help you understand the basic terms and feel comfortable about getting your own computer, without needing to call on expert advice.**

## Types of Computers

### Desktops

Desktop computers require mains power to function. Unlike laptops, which are largely self-contained, desktop computers have separate components. The screen is (usually) separate from the processing components, and a keyboard and mouse are free floating. There are also all-in-one style desktops, which build the processor into the screen. Some key points about desktop computers:

1. If you expect your computer to reside in the one place at all times, it's best to get a desktop.
2. The screen and keyboard on a desktop are much bigger than on a laptop, and they're often much more comfortable for extended use. It's important to think about ergonomics when buying a computer!



Desktop computer

### Laptops

Also known as notebook computers, laptops are battery-powered and designed for portability. As the name implies, you can use them wherever – including on your lap when watching TV, for example.

Some key points about laptops:

1. All the elements you need to use a laptop are built into the case. This includes the screen, keyboard, pointer, webcam, speakers and computing components.
2. Screen size and weight are two of the biggest considerations when buying a laptop (and they're usually related: a bigger screen means more weight).
3. Laptops are best if you want to be able to use your computer when you're away from home, or if you like to move around with your computer when you're at home.

### Tablet

A tablet is a computer that blurs the line between a mobile phone and a full computer. They can be viewed as either a super-sized mobile, or a small, light computer with a touchscreen.

Laptop, or notebook computer



Tablet computer

## Things you can do on a computer

Write letters

Browse the internet

Manage your finances

Play games

Download and watch movies

Listen to music

Stay in touch with friends and family

Share photo albums

Shop online

Edit your own video and photos

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### Operating System and Applications

The physical components of a computer are known as the **hardware**. The other element to a computer is the **software**; this comprises the programs (also called applications or apps) that are run on the computer that make it do the things you want it to.

The most important piece of software is the operating system. The operating system is the software that controls the core functions of the computer, like accessing where files are kept, starting and stopping programs, turning it on and off and so on.

There are several operating systems used in computers today, with various versions of each. Most commonly, you will encounter:

- **Microsoft® Windows®** operating system, which is by far the most widely used operating system on computers, and comes on computers from all different manufacturers.
- **Apple Mac OS** operating system software, used on computers made by Apple.

On top of the operating system run the applications. These are programs designed for a specific task, like a game, a spreadsheet or a word processor. Applications are made for a specific operating system, so applications designed for Windows® won't run on an Apple Mac computer, for example.

### The visible parts of a Computer

If you buy a desktop computer, it will come with a bunch of different pieces, which you have to connect together for it to work. On a laptop or a tablet the pieces are built into one unit, although they're still all present.

The major pieces of the computer are:

#### The computer case

Also called "the box" or just "the computer" (since it contains the "brain" of the computer), the computer case houses all the computing components, like the processor, memory and storage. All the other devices connect to it.



#### The monitor

The monitor is the screen of the computer. Like a TV set, a monitor's size is usually listed in inches or centimetres (cm), representing the length of the diagonal between opposite corners.



#### The keyboard and optical drive

The keyboard contains the keys for typing letters, emails and web addresses. The optical drive is used to play CDs, DVDs and Blu-ray discs. Software sometimes comes on optical discs.



Common Microsoft® applications are available for use on Windows® and Apple operating systems



Microsoft® Windows®

macOS

Apple Mac OS

# Stay safe online

The internet is not without its pitfalls. For any new user to the internet, knowing how to stay safe online is a key lesson. Some important things to remember:

- Don't open email attachments unless you know they're safe.
- Don't give out your personal information to strangers, either in email or on websites.
- People can lie about who they are on email. An email may say it's coming from your bank, but really it might be someone trying to rob you. If you're concerned, call your bank directly.
- Don't install programs downloaded from untrustworthy sources.
- Be very careful about who you give your credit card details to.
- Install internet security software to help protect your PC and your files.
- Always err on the side of caution!



## The mouse

The mouse is used to control an on-screen pointer. That pointer is used to select elements on the screen – like choosing an icon to launch an application. You move the pointer by physically sliding the mouse in the direction you want the pointer to go. Laptop computers don't come with a mouse at all. They usually use a glide pad – a pad just below the keyboard that you run your finger over to direct the pointer. Tablets use a touchscreen: if you want to “point” at something, you just touch the screen where it is.

## The internal parts of a Computer

The computer's internals are like a car engine – you may not be able to see it without cracking it open, but it's still very important. Having a basic understanding of the parts inside the computer is very useful when you're buying one.

### Processor

The processor, also known as the CPU (central processing unit) is the main engine of the computer – where most of the “thinking” gets done. There are hundreds of different models of processor, and they all operate at different speeds. A faster processor means that

games and videos run more smoothly and the computer operates more quickly.

### Memory

A computer processor needs a certain amount of working space for its calculations. The computer's memory holds currently running applications in it. It's measured in gigabytes (GB); one gigabyte is equal to a billion characters or letters.

More memory means you can run more applications at once, and switching between applications will be faster and smoother.

### Disk drives and storage

Whereas memory holds data that you're using right now (see above), the internal disk drive is where data is kept in long-term storage. It's where your photos and music and documents are stored even when you're not using them.

Like memory, it's measured in gigabytes – or terabytes (TB), where one terabyte equals 1000 gigabytes.

### Networking

Computer networking allows your computer to connect to other computers and to the internet.

Computers come with two types of networking: wired and wireless.

Wired networks, also known as LAN (local area networking) use an “Ethernet” cable to connect to other devices.

Wireless networks, also known as WiFi, use radio waves to connect to other devices: most computers will come with either 802.11n or 802.11ac WiFi (802.11 is the technical name for the WiFi standards). 802.11ac is the newer and faster standard.

### Battery

Laptops and tablets have an internal battery, and the battery specification will tell you how long the battery is expected to last between charges.

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### Ports

The back of a computer is typically home to a whole host of different plugs and ports, used for connecting external devices to the main computer body. These are known as I/O ports, and different ports are used for different devices.

The key ports include:

#### HDMI and display

Most computers now use the HDMI interface to connect to a computer monitor – the exact same cable you use to connect things to your flat screen TV set. Some computers do use different display ports to HDMI, however, and they will only work with monitors that also support the kind of display port they have. These other ports include: VGA, DVI and DisplayPort.

#### USB

Most of the external devices that you connect to your computer will plug into one of the computer's USB ports. That includes the mouse, the keyboard,

flash drive, external hard drives, printers, scanners, speakers and just about any other “peripheral” device that connects to your PC.

#### Networking (LAN)

Most desktops and many laptops have a wired networking port. This is the port where you plug the cable that connects to your internet router. (This is a device an internet service provider will provide when you sign up for an internet service; it connects you to the internet).

#### Memory card reader

Some computers have a flash memory card reader built in. These are the same flash memory cards used in digital cameras. Put a flash memory card into the slot, and the computer can grab photos and whatever other data is stored on it.

#### Audio

For most speakers and headphones, a computer will use a 3.5mm audio jack – the exact same type you'll find on your stereo system. The speakers plug directly into that port.

USB connections let you attach devices such as a hard drive or printer to your computer



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